Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1. (currently amended) A system for measurement of the value of a parameter at a plurality of spaced locations and for transmitting electrical signals commensurate with said parameter value to a position remote from said ~~points~~ spaced locations, said system comprising:

a) an elongated member having an insulated conductor and a coaxial cable extending therein;

b) a plurality of sensing elements positioned in spaced relation along said elongated member with at least one of said sensor elements at each of said spaced locations, to generate electrical signals commensurate with said parameter value;

c) an electrical power source to which said first end of said insulated conductor is in electrical communication; and

d) means for inductively coupling said power source to said sensing elements to provide electrical power for operation of said sensing elements;

e) a control element for selective generation of electrical signals representing data to which said sensing elements are responsive; and

f) wherein said electrical signals are communicated to said sensing elements over said coaxial cable.

2. (original) The system of claim 1 wherein said means for inductively coupling comprise ~~an elongated conductor in electrical communication with said power source and extending along said elongated member,~~ and a plurality of current transformers encircling said insulated conductor.

3. (original) The system of claim 2 wherein said current transformers include a toroidal core with open center through which said insulated conductor extends.

4. (original) The system of claim 3 and further including data storage means associated with each of said sensing elements.

5. (cancelled)

6. (cancelled).

7. (original) The system of claim [[6]] 1 wherein said coaxial cable is in coupled mode.

8. (original) The system of claim 7 wherein said coaxial cable extends along at least a portion of the length of said elongated member.

9. (original) The system of claim 8 wherein said means for inductively coupling comprises ~~an insulated conductor in electrical communication with said power source and~~ a

plurality of current transformers, and wherein said insulated conductor and said coaxial cable extend in substantially parallel relation along said elongated member.

10. (original) The system of claim 9 and further including a control node to which said coaxial cable is connected and wherein each of said sensing elements include RF receiving and transmitting means for transfer of data in the form of RF signals between said coaxial cable and said sensing elements.

11. (original) The system of claim 10 wherein said power source provides AC power to said conductor, and wherein each of said sensing elements further includes a phase locked loop to control the frequency of the AC power and thereby the frequency of generation of said electrical signals.

12. (original) The method of measuring the value of a predetermined parameter at a plurality of locations spaced along the length of an elongated member suited for towing behind a moving vehicle, said method comprising:

a) positioning a sensing element adapted to generate electrical signals commensurate with said parameter value at each of said plurality of locations;

b) providing a source of electrical power;

c) inductively coupling said source of electrical power to each of said sensing elements via an insulated conductor to provide electrical power for operation thereof;

d) positioning a coaxial cable to extend in proximity to each of said sensing elements; and

e) transmitting said electrical signals via said coaxial cable to a remote location for receipt by an end user.

13. (original) The method of claim 12 wherein said inductively coupling comprises providing a plurality of current transformers, each having a toroidal core with open center, and ~~passing a single,~~ with said insulated conductor passing through said open center of each of said cores.

14. (original) The method of claim 13 wherein said coaxial cable is in coupled mode.

15. (original) The method of claim 12 wherein said sensing elements are powered solely by said inductive coupling to said power source.

16. (original) The method of claim 15 wherein said sensing elements include RF receiving and transmitting capability, and further including connecting to said coaxial cable a control node having selectively operable signal generating capability for actuating any selected one of said sensing elements to transmit, via said coaxial cable, said signals commensurate with said parameter value.

17. (original) The method of claim 16 wherein said power source generates AC power, and comprising the further steps of controlling the frequency of said AC power by a phase locked loop at each of said sensing elements and repeatedly generating said electrical signals at a rate commensurate with said controlled frequency.

18. (withdrawn) An acoustic sensing array for obtaining measurements of sound energy at any of a plurality of spaced positions upon generation of a command signal, said array comprising:

a) an elongated member;

b) a plurality of microcells each including at least one sensing element for generating electrical signals commensurate with the value of sound energy at its location, and RF receiving and transmitting means;

c) means supporting one of said microcells upon said elongated member at each of said spaced positions;

d) an insulated electrical conductor extending along at least a portion of the length of said elongated member;

e) a source of AC electrical power connected to said conductor;

f) means for inductively coupling said conductor to each of said microcells to provide electrical power for operation of said microcells;

g) a coaxial cable extending along at least a portion of the length of said elongated member;

h) a control node for transmitting outgoing and receiving incoming RF signals via said coaxial cable to and from said sensing elements, thereby providing sound energy data which is synchronously sampled and asynchronously transmitted by said sensor array while eliminating physical electrical connections for both powering and signaling.

19. (withdrawn) The sensor array of claim 18 wherein said coaxial cable is in coupled mode.

20. (withdrawn) The sensor array of claim 19 wherein said elongated member is cylindrical and said control node is mounted therein.

21. (withdrawn) The sensor array of claim 20 wherein said elongated member is hollow and said conductor and coaxial cable extend through the open center thereof.

22. (withdrawn) The sensor array of claim 18 wherein said means for inductively coupling comprise a plurality of current transformers, each having a toroidal core with open center through which said conductor passes.

23. (withdrawn) The sensor array of claim 22 each of said microcells further includes a phase locked loop for controlling the frequency of said AC power and wherein said phase locked loop is connected to said sensing element to control the frequency of generation of said electrical signals.

24. (withdrawn) The sensor array of claim 23 wherein said microcells each include means for converting said AC power to DC power at a terminal of said microcells.